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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/785,061	02/16/2001	Yeon-Sang Koo	A33999	4783

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EXAMINER	
LERNER, MARTIN	
ART UNIT	**PAPER NUMBER**
2654	

DATE MAILED: 08/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/785,061	KOO, YEON-SANG	
	Examiner	Art Unit	
	Martin Lerner	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 to 13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 to 13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 February 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 1A and 1B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. Page 1, Lines 14 to 16 of the Specification refers to a conventional network. See MPEP § 608.02(g).

Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because it is more than 150 words. Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities:

On page 6, line 7, "internetork" should be –internetwork—.

On page 8, line 4, "vocodig" should be –vocoding—.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1 to 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Mermelstein et al.* in view of *Armbruster et al.*

Regarding independent claims 1 and 9, *Mermelstein et al.* discloses a method for vocoding, comprising:

"determining if a first vocoding algorithm of a sending terminal is the same as a second vocoding algorithm of a destination terminal" – transcoder 510 includes a signaling and control block to determine if a) the connection terminates on an identical LPC-type vocoder, or b) the connection terminates on a different LPC-type vocoder (column 11, lines 4 to 15: Figure 5);

"if the first vocoding algorithm is the same as the second vocoding algorithm, bypassing voice data from the sending terminal and transmitting the bypassed voice data to the destination terminal" – when the connection terminates on an identical LPC-type vocoder, send the compressed speech signal, from mobile terminal A, through the bypass section 546 which will passthrough the compressed speech data for transmission to the bypass section 586 of transcoder 550 towards mobile terminal B (column 11, lines 18 to 29: Figure 5);

"if the first vocoding algorithm is not the same as the second vocoding algorithm, determining if the sending terminal is a mobile terminal" – transcoder 510 includes a signaling and control block to determine if c) the connection terminates on an entity not covered by a) or b) above (i.e. vocoder of another family type, new type of vocoder, wireline terminal, etc.) (column 11, lines 15 to 18: Figure 5); thus, c) determines whether one of the terminals is a wireline terminal instead of a mobile terminal after it is determined by a) that the connection terminates on a vocoder that is not identical;

"if the sending terminal is the mobile terminal, [at a first radio access network (RAN) gateway coupled to the sending mobile terminal,] vocoding the voice data at a data rate of the circuit network to thereby generate first vocoded data and transmitting the first vocoded data [to a second RAN gateway coupled to a destination mobile terminal]" – when the connection terminates on a different LPC-type vocoder for which a transcoding module is available, apply the pseudo-vocoder 544 to convert compressed speech data, from mobile terminal A, to a common-format signal for transmission to the pseudo-encoder 584 of transcoder 550 (column 11, lines 29 to 35: Figure 5); "a data rate of the circuit network" is equivalent to "a common-format signal"; the step is executed only if b) the connections terminal on different vocoders, and if c) the connection is a mobile entity and not a wireline entity; (column 11, lines 13 to 17: Figure 5);

"[at the second RAN gateway,] vocoding the first vocoded data to be compatible with the second vocoding algorithm of the destination mobile terminal to thereby generate second vocoded data and transmitting the second vocoded data to the

destination terminal" – if the transcoder is different, that is the remote transcoder indicates that the vocoder associated with mobile terminal B is of a different LPC-type, then the signaling and control block 520 enables the decoding block 540 to activate the pseudo-decoder 544; in this mode of operation, the signaling and control block 520 expects to receive speech signals encoded in a common format that the pseudo-decoder 544 will transform into the format of the vocoder associated with the mobile station A; thus, the data issued by the transcoder 510 is in a common format that the pseudo-encoder 584 will encode in the format of the vocoder associated with the mobile terminal B (column 13, lines 26 to 45: Figure 5).

Regarding independent claims 1 and 9, *Mermelstein et al.* discloses a communications architecture for a link between two wireless mobile terminals 340 and 380 sent via base station 350 to transcoder 392, and then via transcoder 394 to base station 370 and mobile terminal 380. (Column 9, Line 57 to Column 10, Line 6: Figure 3b) Thus, transcoders 392 and 394 are analogous to the first and second radio access network (RAN) gateways because they represent two distinct locations for bypassing or changing the coding format of vocoded speech. Specifically, *Mermelstein et al.* bypasses vocoding in both transcoders 392 and 394 for bypassed transcoding, and for non-bypass vocoding converts a first vocoded format to a common format in first vocoder 392 and then converts common format speech into a second vocoded format in second vocoder 394, so as to transmit between mobile terminals 340 and 380, when mobile terminals 340 and 380 do not have a common format. The only element not expressly disclosed by *Mermelstein et al.* is that first transcoder 392 and second

transcoder 394 are located at first and second radio access network (RAN) gateways. First transcoder 392 and second transcoder 394 may be equivalent to radio access network (RAN) gateways because they function as gateways in a radio network defined by a mobile telephone system. However, *Armbruster et al.* teaches a radio telecommunication network, where transcoders 50 are placed within earth terminal controller 54 of gateway 34. (Column 6, Lines 17 to 52: Figure 3) Specifically, there are first and second gateways 34, 34', each having an earth terminal controller 54, corresponding to first and second transcoders. (Column 3, Line 16 to Column 4, Line 22: Figure 2) *Armbruster et al.* suggests an advantage of improving spectrum usage by eliminating unnecessary compression/decompression cycles. (Column 2, Lines 40 to 67) It would have been obvious to one having ordinary skill in the art to place first and second transcoders 392, 394 of *Mermelstein et al.* in first and second radio access network (RAN) gateways 34, 34' of *Armbruster et al.* for the purpose of improving spectrum usage by eliminating unnecessary compression/decompression cycles.

Regarding independent claims 4 and 11, *Mermelstein et al.* discloses a method for vocoding, comprising:

"determining if a first vocoding algorithm of a sending terminal is the same as a second vocoding algorithm of a destination terminal" – the main function of the signaling and control block 610 is to determine if a) the connection terminates on an identical LPC-type vocoder (column 13, lines 60 to 65: Figure 6);

"if the first vocoding algorithm is the same as the second vocoding algorithm, bypassing voice data from the sending terminal and transmitting the bypassed voice data to the destination terminal" – when the connection terminates on an identical LPC-type vocoder, send the compressed speech signal to the bypass section 626 which will passthrough the speech data via the bypass section 632 for transmission to the identical LPC-type vocoder (column 14, lines 11 to 21: Figure 6);

"if the first vocoding algorithm is not the same as the second vocoding algorithm, determining if the sending terminal is a mobile terminal" – transcoder 610 includes a signaling and control block to determine if c) the connection terminates on an entity not covered by a) or b) above (i.e. vocoder of another family type, new type of vocoder, wireline terminal, etc.) (column 13, line 66 to column 14, line 3: Figure 6); thus, c) determines whether one of the terminals is a wireline terminal instead of a mobile terminal after it is determined by a) that the connection terminates on a vocoder that is not identical;

"if the sending terminal is the mobile terminal, [at a first radio access network (RAN) gateway coupled to the sending mobile terminal,] vocoding the voice data at a data rate of the circuit network to thereby generate first vocoded data" – when the connection terminates on a different LPC-type vocoder for which a transcoding module is available, apply the pseudo-vocoder 624 to convert compressed speech data to a common-format signal for transmission to the pseudo-encoder 634 (column 14, lines 21 to 29: Figure 6); "a data rate of the circuit network" is equivalent to "a common-format signal"; the step is executed only if b) the connections terminal on different vocoders,

and if c) the connection is a mobile entity and not a wireline entity (column 13, line 66 to column 14, line 3: Figure 6);

"[at the first RAN gateway,] vocoding the first vocoded data to be compatible with the second vocoding algorithm of the destination mobile terminal to thereby generate second vocoded data" – pseudo-encoder 634 then converts the common format back to a compressed signal of the different LPC-type vocoder (column 14, lines 21 to 29: Figure 6); thus, pseudo-encoder 634 converts common format with "the second vocoding algorithm" to generate "second vocoded data";

"transmitting the second vocoded data to the destination mobile terminal" – the compressed speech signal is sent to mobile terminal B (column 14, lines 28 to 29: Figures 3c and 6).

Regarding independent claims 4 and 11, *Mermelstein et al.* discloses a communication architecture for a link between two wireless mobile terminals 340 and 380 sent via base station 350 to cross transcoding node 390, and then via base station 370 to mobile terminal 380. (Column 9, Line 57 to Column 10, Line 6: Figure 3b) Thus, transcoding node 390 of Figure 3c is equivalent to combining transcoders 392 and 394 of Figure 3b, and is analogous to performing all transcoding functions in a first radio access network (RAN) gateway. Specifically, *Mermelstein et al.* bypasses vocoding in cross transcoding node 390 for bypassed transcoding, and for non-bypass vocoding both converts a first vocoded format to a common format and then converts common format speech into a second vocoded format in transcoding node 390, so as to transmit between mobile terminals 340 and 380, when mobile terminals 340 and 380 do not

have a common format. The only element not expressly disclosed by *Mermelstein et al.* is that transcoding node 390 is located at a first radio access network (RAN) gateway. Transcoding node 390 may be equivalent to a radio access network (RAN) gateway because it functions as a gateway in a radio network defined by a mobile telephone system. However, *Armbruster et al.* teaches a radio telecommunication network, where transcoders 50 are placed within earth terminal controller 54 of gateway 34. (Column 6, Lines 17 to 52: Figure 3) Specifically, there are gateways 34, 34', each having an earth terminal controller 54, corresponding to a transcoding node 390. (Column 3, Line 16 to Column 4, Line 22: Figure 2) *Armbruster et al.* suggests an advantage of improving spectrum usage by eliminating unnecessary compression/decompression cycles. (Column 2, Lines 40 to 67) It would have been obvious to one having ordinary skill in the art to place transcoding node 390 of *Mermelstein et al.* in a radio access network (RAN) gateway 34 of *Armbruster et al.* for the purpose of improving spectrum usage by eliminating unnecessary compression/decompression cycles.

Regarding claims 2, 8, 10, and 13, *Mermelstein et al.* discloses when the connection terminates on a entity not covered by a) or b) above (i.e. vocoder of another family type new type of vocoder, wireline terminal, etc.), apply a decoder to convert compressed speech data, from mobile terminal A, to PCM samples (column 11, lines 35 to 42; column 14, lines 30 to 37: Figures 5 and 6); PCM samples for a wireline network are "a data rate of the circuit network"; if one of the terminals is a wireline terminal ("a

terminal for the circuit network"), then the speech must be converted back to PCM samples characteristic of a wireline network.

Regarding claims 3, 5, and 7, *Mermelstein et al.* discloses transcoders 510, 550, and 600 have encoders and decoders utilizing a plurality of LPC-type vocoding algorithms (LPC Vocoder Types 1 to N) (Figure 4); vocoders include a plurality of LPC-type vocoding algorithms, common format algorithms, and PCM algorithms ("a vocoder for vocoding the voice data at the data rate of the circuit network") (Figures 5 and 6).

Regarding claims 6 and 12, these claims merely recite an identical process is performed in a second radio access network; *Mermelstein et al.* discloses first and second transcoders 392, 394 (Figure 3b), thereby distributing functions in two transcoders, and also performing all functions in the same cross transcoding node (Figure 3c); *Armbruster et al.* teaches first and second gateways 34, 34'; thus, performing the same functions in a second radio access network as in a first radio access network is just a duplication of structure and function.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

Rabipour et al. ('339), Blust et al., Liu et al., Strawczynski et al. ('022), Strawczynski et al. ('189), Brent et al., Aftelak, Tseng et al., Mladenovic et al., and Chu et al. disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Lerner whose telephone number is (703) 308-9064. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (703) 305-9645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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8/25/04

Martin Lerner
Examiner
Group Art Unit 2654